Amendments to the Claims

1. (original) A sensor system, comprising:

a sensor including:

at least one magnet; and

a plurality of magnetic flux responsive devices fixedly adjacent to said at least one magnet, each of said plurality of magnetic flux responsive devices having a primary sensing plane, at least two primary sensing planes being offset from each other; and

a quadrature normalization circuit communicatively connected to said sensor.

2. (original) The system of claim 1, wherein said plurality of magnetic flux responsive devices include a first magnetic flux responsive device and a second magnetic flux responsive device, said first magnetic flux responsive device fixed proximate a side of said at least one magnet, said second magnetic flux responsive device fixed proximate another side of said at least one magnet.

3. (original) The system of claim 1, wherein said at least one magnet substantially surrounds said plurality of magnetic flux responsive devices.

4. (original) The system of claim 1, further comprising a housing, at least one of said at least one magnet with said plurality of magnetic flux responsive devices and said quadrature normalization circuit substantially positioned within said housing.

5. (original) The system of claim 4, wherein said at least one magnet and said plurality of magnetic flux responsive devices are encapsulated within said housing.

6. (original) The system of claim 1, wherein said plurality of magnetic flux responsive devices each output a signal similar in frequency to each other including a first signal and a second signal, said first signal out of phase with said second signal.

7. (original) The system of claim 6, wherein said first signal is approximately 90° out of phase with said second signal.

8. (original) The system of claim 1, wherein said normalization circuit receives a signal from each of said plurality of magnetic flux responsive devices including a first signal and a second signal, said normalization circuit outputs a signal dependent on a frequency of said first signal, an event in said first signal and an event in said second signal.

9. (original) The system of claim 8, wherein said normalization circuit further outputs a fourth signal dependent on said first signal.

10. (original) The system of claim 1, further comprising a ferrous target having protrusions thereon, said ferrous target located proximate to said sensor, said protrusions directed toward said sensor.

11. (original) The system of claim 1, wherein said quadrature normalization circuit outputs at least one of a quadrature signal, a digital number, a velocity signal and a direction signal.

12. (amended) A sensor, comprising:

at least one magnet; and

a plurality of magnetic flux responsive devices fixedly adjacent to said at least one magnet, each of said plurality of magnetic flux responsive devices having a primary sensing plane, at least two primary sensing planes being offset from each other, said at least one magnet substantially surrounding said plurality of magnetic flux responsive devices.

13. (amended) The sensor of claim 12, wherein said plurality of magnetic flux responsive devices include a first magnetic flux responsive device and a second magnetic flux responsive device, said first magnetic flux responsive device separated from ~~fixed proximate a side of said at least one magnet~~, said second magnetic flux responsive device ~~fixed proximate another side of said at least one magnet~~.

14. (canceled)

15. (amended) The sensor of claim ~~14~~ 12, wherein said at least one magnet is a magnetic cup.

16. The sensor of claim 12, wherein said plurality of magnetic flux responsive devices each output a signal similar in frequency to each other including a first signal and a second signal, said first signal out of phase with said second signal.

17. The sensor of claim 16, wherein said first signal is approximately 90° out of phase with said second signal.

18. (withdrawn) A method of normalizing a quadrature signal, comprising the steps of:

receiving a first signal and a second signal;

determining a frequency of said first signal;

detecting an event in said first signal;

detecting an event in said second signal; and

outputting a third signal dependent on said event in said second signal, said event in said first signal and said frequency of said first signal.

19. (withdrawn) The method of claim 18, further comprising the step of outputting a fourth signal dependent on said first signal.

20. (withdrawn) The method of claim 18, wherein said first signal and said second signal are generated by at least two magnetic flux responsive devices adjacent a magnet.

21. (withdrawn) The method of claim 20, wherein a ferrous target having protrusions thereon moves relative to said at least two magnetic flux responsive devices thereby varying a magnetic field detected by said at least two magnetic flux responsive devices thereby generating said first signal and said second signal.

22. (withdrawn) The method of claim 18, wherein said outputting step includes delaying said third signal approximately ¼ of the inverse of said frequency from said event in said first signal.

23. (withdrawn) The method of claim 18, wherein said first signal and said second signal received in said receiving step are from a sensor, said sensor including:

at least one magnet; and

a plurality of magnetic flux responsive devices fixedly adjacent to said at least one magnet, each of said plurality of magnetic flux responsive devices having a primary sensing plane, at least two primary sensing planes being offset from each other.